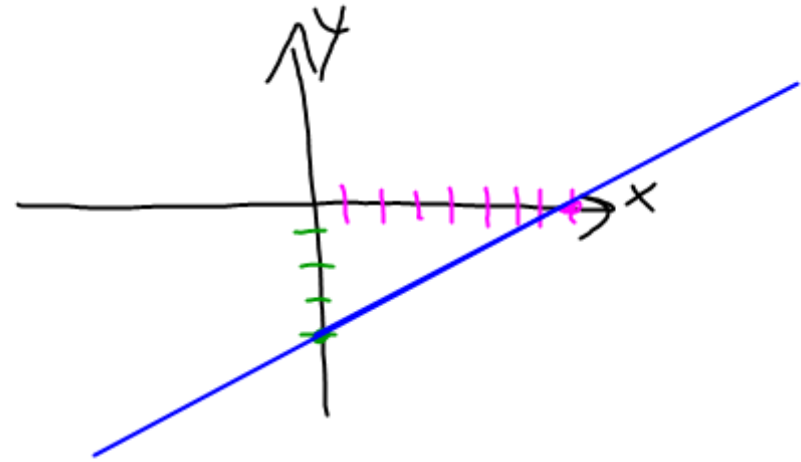


WARM-UP:

GRAPH



$$2x - 4y = 16$$

slope-int form: $y = \frac{1}{2}x - 4$

$$\frac{2x - 4(0)}{2} = \frac{16}{2}$$

$$x = 8$$

$$(8, 0)$$

x	y
0	?
1	

$$\frac{2(0) - 4y}{-4} = \frac{16}{-4}$$

$$y = -4$$

$$(0, -4)$$

26

$$y = 1 - 4d$$

$$f(d) = 1 - 4d$$

$$f(-5) ?$$

$$f(-5) = 1 - 4(-5)$$

$$f(-5) = 1 + 20$$

$$f(-5) = 21$$

(47)

Volume of Sphere?

$$V_s = \frac{4}{3} \pi r^3$$

$$r = 10.5 \text{ cm}$$

(64)

$$f(x) = -2x + 3, \quad g(x) = 4x - 3$$

What's greater? $f(5)$ or $g(-2)$?

$$\begin{aligned} f(5) &= -2(5) + 3 \\ &= -10 + 3 \\ &= -7 \end{aligned}$$

$$\begin{aligned} g(-2) &= 4(-2) - 3 \\ &= -8 - 3 \\ &= -11 \end{aligned}$$

$$f(x) > g(x)$$

38

38



function

x Domain: all Reals
 \mathbb{R}

y Range: all positive
Reals
 \mathbb{R}^+

~~$2x - 4y = 16$~~ try: $(-2, -2)$ and $(4, 2)$
 $-\frac{2}{3}$? $\frac{2}{6}$? $\frac{4}{6}$?

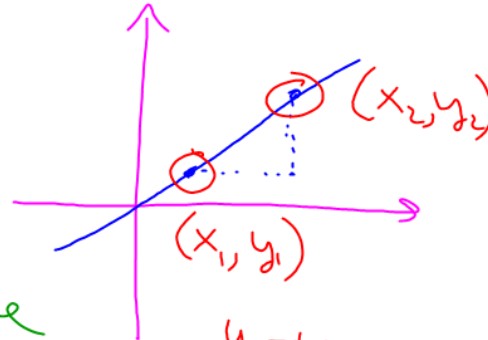
Standard Form: $Ax + By = C$

Slope?

rise
run

part of a straight line

$$\begin{aligned} x_2 - x_1 \\ y_2 - y_1 \end{aligned}$$



$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} ?$$

$$\frac{y_1 - y_2}{x_1 - x_2}$$

$$y = \textcircled{m}x + b$$

$$\begin{matrix} x_1, y_1 & x_2, y_2 \\ (-2, -2), & (4, 2) \end{matrix}$$

$$y = \textcircled{m}x + b$$

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{2 - (-2)}{4 - (-2)} = \frac{4}{6} = \frac{2}{3}$$

Point - Slope Form

The line through point (x_1, y_1) with slope m has the equation:

slope-int
 $y = mx + b$

$$y - y_1 = m(x - x_1)$$

try: Slope 2, through (x_1, y_1)
 $(4, -2)$

$$y - (-2) = 2(x - 4)$$

$$y + 2 = 2x - 8$$

$$y = 2x - 10$$

Use point-slope form

$$(x_1, y_1) = (0, b)$$

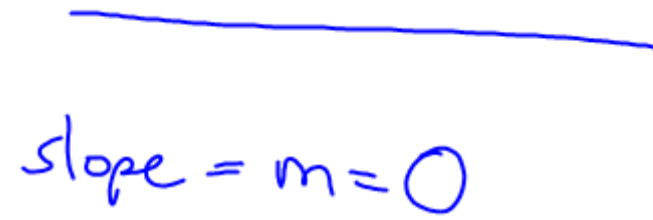
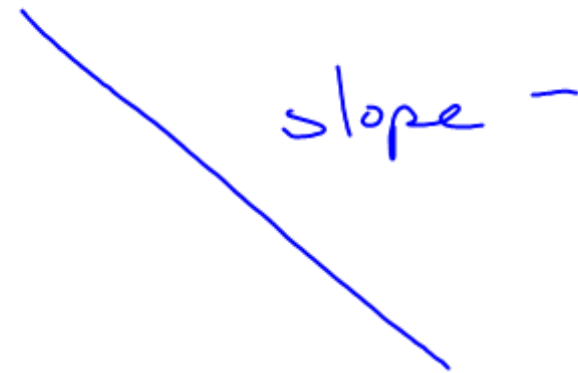
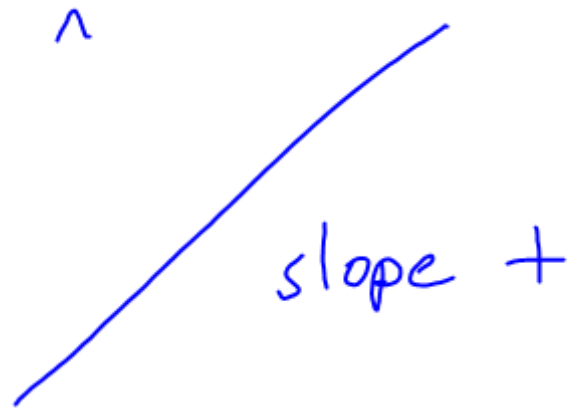
slope = m

solve for y

$$y = mx + b$$

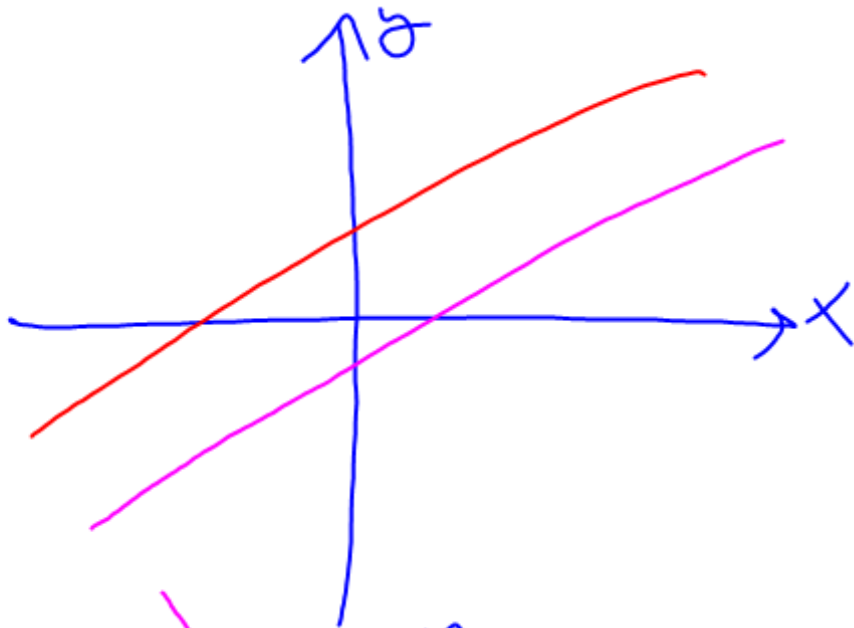
NOTE:

Unless otherwise stated
always solve for ^{slope}
y-int form.



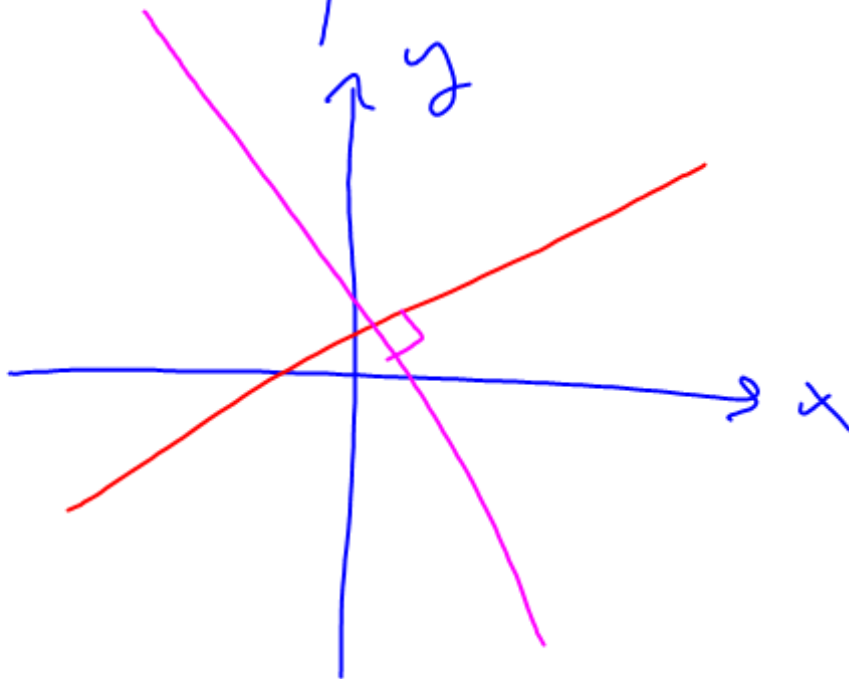
$$\frac{\text{rise}}{\text{run}} = \frac{?}{\emptyset}$$

slope undefined



parallel

slopes are same
y-int are diff



perpendicular?

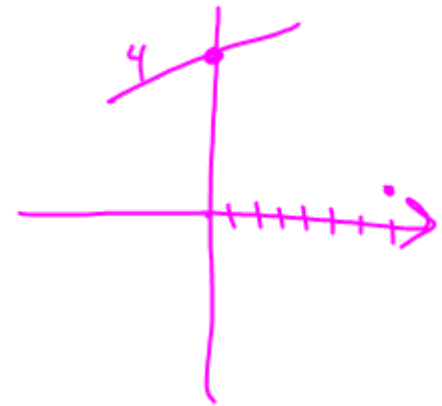
$$\text{slope} = -\frac{1}{m}$$

$$y = \frac{3}{4}x + 2$$

Write an equation perpendicular & goes through (0,4)

$$\text{slope} = -\frac{1}{m} = -\frac{1}{\frac{3}{4}} = -1 \cdot \frac{4}{3} = -\frac{4}{3}$$

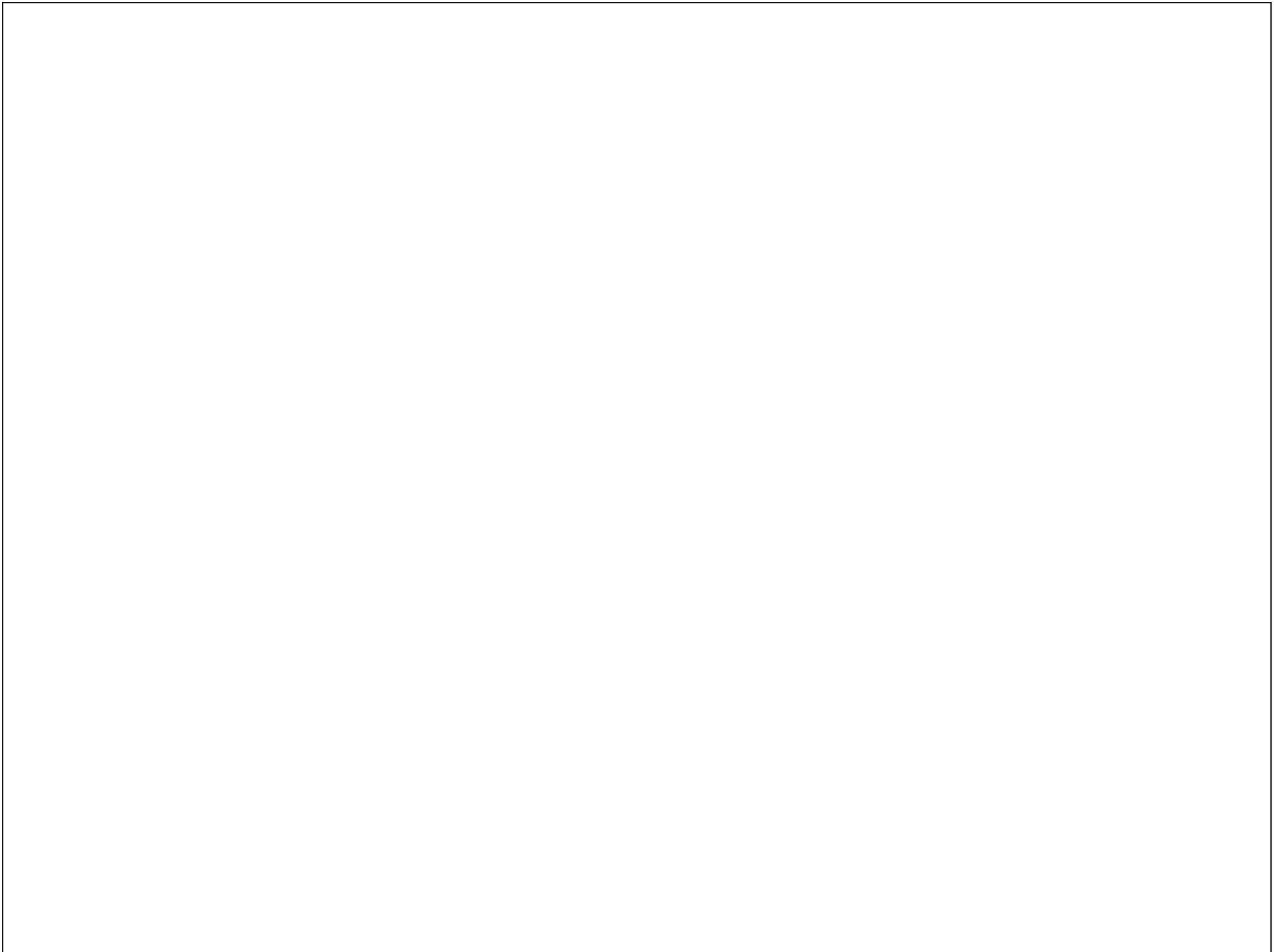
$$y = -\frac{4}{3}x + 4$$



(6, 1) → $y = mx + b$?

$$1 = -\frac{4}{3}(\underline{6}) + b$$

$$b = 9?$$



HW: P.67 (9-13(odd), 20, 26, 35-39, 69, 82